

# Environmental Resource Group

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February 24, 2006

John Jang, Water Resources Control Engineer  
San Francisco Bay Region  
California Regional Water Quality Control Board  
1515 Clay Street, Suite 1400  
Oakland, California 94612

**RE: Groundwater Monitoring 3<sup>rd</sup> Quarter 2004 Report  
Alfa Gas Station  
5 Ashford Avenue, Mill Valley, California**

Dear Mr. Jang:

On behalf of Alfa Investments, Inc., Environmental Resource Group, Inc. is uploading the 3<sup>rd</sup> Quarter 2004 Groundwater Monitoring Report for the Alfa Gas Station at 5 Ashford Avenue in Mill Valley, Marin County, California. The report was initially issued in January 2005 and this uploaded version has been updated and revised slightly.

Please call me at 650-234-1030 if you have any questions.

Sincerely Yours,  
*ENVIRONMENTAL RESOURCE GROUP*



Paul Studemeister  
California Professional Geologist, PG 4635  
California Certified Engineering Geologist, CEG 1746

**GROUNDWATER MONITORING  
3rd QUARTER 2004 REPORT  
ALFA GAS STATION  
5 ASHFORD AVENUE  
MILL VALLEY, CALIFORNIA**

**January 2005**

**Environmental Resource Group**

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**GROUNDWATER MONITORING  
3rd QUARTER 2004 REPORT  
ALFA GAS STATION  
5 ASHFORD AVENUE  
MILL VALLEY, CALIFORNIA**

**January 2005**

Prepared for:

**Alfa Investments, Inc.**

Mr. Farook Hansia  
570 Redwood Hwy  
Mill Valley, CA 94941

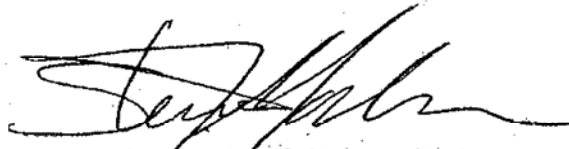
Prepared by:

**Environmental Resource Group, Inc.**

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Ben Wells  
Principal Geologist



Steven I. Michelson, R.G.  
California Registered Geologist (5165)



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## **1. INTRODUCTION**

Environmental Resource Group, Inc. (ERG) has prepared this *Groundwater Monitoring 3<sup>rd</sup> Quarter 2004 Report* on behalf of Alfa Investments, Inc. (Alfa Investments) for the facility located at 5 Ashford Avenue in Mill Valley, California (Site; Plate 1). This Report is submitted pursuant to the Regional Water Quality Control Board (RWQCB) approval of a work plan dated April 2002, *Work Plan to Investigate Ground Water and Creek Sediment* (ERG, April 2002).

In summary, seven underground storage tanks (USTs) were removed from the Site in 1999. Petroleum hydrocarbons have been detected in soil and groundwater at the Site. Groundwater monitoring began at the Site in 1990, but has not been performed routinely. There are currently seven monitor wells at the Site. Activities conducted during the third quarter 2004 consisted of analyzing groundwater samples collected from the monitoring wells at the Site.

## **2. BACKGROUND**

### **2.1 SITE DESCRIPTION**

The triangular shaped Site is an operating Alfa Gas Service Station located west of the intersection of East Blithedale Avenue and Ashford Avenue. The Site and areas to the north, east, and west are generally flat. A steep hill lies south of the Site across East Blithedale Avenue. Residential areas are north and west of the Site.

The Site is bordered by Ashford Avenue on the north side, East Blithedale Avenue on the south side, and by a tidal creek to the west, which flows south towards Sausalito Canal. The creek forming the western edge of the Site is incised approximately 6 feet. A storm drainage ditch discharges into the tidal creek near the southwest corner of the Site.

The Site has been utilized as a gasoline and automobile service station since the 1940s with vehicle repair ceasing in the 1970s. Past operators include Chevron Oil Company, Redwood Oil Company and C&S Oil Company. There are currently three operating USTs at the Site, one 5,000-gallon diesel UST and two 12,000-gallon gasoline USTs.

## **2.2 SITE GEOLOGY**

The site is underlain by estuarine deposits that consist primarily of sandy to silty gray to olive clays, which is typical of Bay Mud. The Bay Mud consists of clay and silty clay with minor lenses of silt and silty fine sand. Groundwater appears to be concentrated in the silt and silty fine sand lenses. Bedrock beneath the Site is comprised of marine siltstone and sandstone of the Merced Formation (USGS, 1997). Depth to bedrock at the site is undetermined. Appendix A contains copies of boring logs and monitor well logs.

## **2.3 GROUNDWATER GRADIENT**

In borings advanced at the Site, groundwater was initially evident at approximately 10 feet below ground surface (bgs). However, the static depth to groundwater measured in monitoring wells completed at the Site has been generally at 3 feet to 5 feet bgs (Table 1). Shallow groundwater was observed in the excavation performed to install the USTs (ERG, 2000). Based on recent groundwater elevations, the interpreted potentiometric groundwater surface pattern for the Site indicated a trough generally striking west-southwest and towards the tidal creek with a gradient magnitude of approximately 0.02 feet per foot.

## **2.4 PREVIOUS INVESTIGATIONS**

Historical aspects of the Site are presented in technical reports prepared by Environmental Geology Services (EGS, 06/14/99), EnviroNet Consulting, Inc. (EnviroNet, 04/01/98), Sierra Environmental Services (SES, 09/28/90; 04/03/91), and ERG (09/2001, 02/2003, 05/2004). Past operators include Chevron Oil Company, Redwood Oil Company, and C&S Oil Company.

In 1999, seven underground storage tanks (USTs) were removed from the Site. These USTs consisted of two 8,000-gallon gasoline tanks, three 10,000-gallon gasoline tanks, one 10,000-gallon diesel tank, and one 1,000-gallon waste oil tank.

Soil and sediment samples have been collected along the tidal creek and drainage ditch in 2001 and 2002. The samples revealed measurable concentrations of total petroleum hydrocarbons as diesel (TPHd) and as motor oil (TPHmo), methyl tertiary butyl ether (MTBE), and lead. However, the concentrations do not appear to pose significant actionable human health or environmental risks.

Four groundwater monitoring wells (MW-1 through MW-4) were installed in September 1990 and five more monitoring wells (MW-5 through MW-9) in February 1991. Monitoring wells MW-1 through MW-4 and MW-7 were destroyed in 1999 during the USTs removal and

excavation work. Monitoring Wells MW-1R, MW-3R, and MW-7R were installed in November 2002 in the vicinity of former monitoring wells MW-1, MW-3 and MW-7. Routine quarterly groundwater monitoring began in the fourth quarter of 2000. The historical groundwater analytical data are summarized on Table 2. Field and natural attenuation parameters are presented in Table 3.

### **3. THIRD QUARTER 2004 GROUNDWATER MONITORING**

Groundwater monitoring during the third quarter 2004 was performed on September 24, 2004.

#### **3.1 GROUNDWATER MONITORING METHODS**

##### **3.1.1 Sample Collection Methods**

Groundwater samples were collected from the monitoring wells at the Site. Sampling activities included depth-to-water and total well depth measurements, subjective evaluation, and purging and sampling groundwater for laboratory analyses.

For each well, depth to water and total well depth were measured to the nearest 0.01 foot with a Solinst electronic water-level indicator. Subjective evaluation of the groundwater consisted of gently lowering a dedicated Teflon bailer into the well casing, retrieving a groundwater sample, and examining the water sample for the possible presence of floating product, sheen, or other features.

Following depth-to-water measurements, each well was purged of a minimum of three casing volumes using a dedicated bailer. The temperature, pH, conductivity, and dissolved oxygen in the purged water were monitored in the field during the well purging process.

Following the purging of at least three casing volumes and after the water level recovered to at least 80% of the static water level, a dedicated bailer was used to retrieve a groundwater sample for laboratory analyses from each well. Groundwater sampling consisted of lowering the bailer into the well and then transferring the retrieved groundwater in the bailer into 40-ml vials with hydrochloric acid preservative, unpreserved 1-liter amber glass bottles, and preserved and unpreserved 250-ml plastic bottles. The containers were promptly sealed with Teflon lined caps, labeled, and placed in iced storage for transport to a state-certified laboratory.

Water level measurement equipment was decontaminated and cleaned with a Liquinox™ solution and water rinse between uses to avoid cross-contamination. Wastewater generated

during the well purging and decontamination activities was placed in 55-gallon Department of Transportation (DOT) drums. The drums were sealed and labeled for temporary storage at the subject site. Field data are included in Appendix A.

### **3.1.2 Groundwater Sample Analysis**

The groundwater samples were transported in an iced cooler following chain of custody protocol to state-certified Analytical Sciences of Petaluma, California (California Department of Health Services Certificate, CDHSC 2303). The samples were analyzed for total purgeable petroleum hydrocarbons as gasoline (TPHg) and as diesel (TPHd) by Environmental Protection Agency (EPA) Methods 8015M; benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8020; and methyl-tert-butyl-ether (MTBE) by EPA Method 8260M. The laboratory report is included in Appendix B.

## **3.2 GROUNDWATER ANALYTICAL RESULTS**

### **3.2.1 Petroleum Hydrocarbons**

Groundwater samples collected from the seven monitoring wells did not reveal measurable concentrations of TPHd above laboratory reporting limit. TPHg was measured in MW-1R at 110 micrograms per liter ( $\mu\text{g/L}$ ), in MW-3 at 65  $\mu\text{g/L}$ , and in MW-5 at 80  $\mu\text{g/L}$ . The laboratory reported that the TPHg consisted mainly of MTBE. MTBE was measured in MW-1 at 110  $\mu\text{g/L}$ , in MW-3 at 65  $\mu\text{g/L}$ , in MW-5 at 80  $\mu\text{g/L}$ , in MW-6 at 5.4  $\mu\text{g/L}$ , and in MW-7 at 15  $\mu\text{g/L}$ . The analytical results for petroleum hydrocarbons are summarized on Table 2. A copy of the laboratory report is included in Appendix B.

### **3.2.2 Natural Attenuation Parameters**

Dissolved oxygen concentrations were measured in each of the monitoring wells and ranged from 0.3 milligrams per liter (mg/L) in MW-3R to 1.4 mg/L in MW-9. The monitoring data are presented in Table 3.

## **4. INTERPRETATION OF THE RESULTS**

Groundwater monitoring samples revealed measurable concentrations of petroleum hydrocarbons. The following provides an interpretation of the results relative to applicable regulatory criteria.

### **4.1 APPLICABLE REGULATORY CRITERIA**

Site cleanup goals must be protective of both human health and the environment. The determination of site cleanup goals includes the potential impact to groundwater from chemicals in soil, potential human health risks posed by chemicals in soil and groundwater, and protection of the beneficial uses of the water resource. In lieu of site-specific risk evaluations, regulatory guidance and/or screening levels can be used to identify conditions of potential concern. The California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB, July 2003) including recent updates and corrections) environmental screening levels (ESLs) are used herein to evaluate the concentrations of chemicals recently measured in groundwater at the Site.

The Basin Plan (RWQCB, 1995) and Board Resolution No. 88-63 Sources of Drinking Water, state that groundwater with electrical conductivity above 5,000  $\mu\text{mhos/cm}$  may not be suitable to supply a public water system. The electrical conductivity of groundwater is generally above 5,000  $\mu\text{mhos/cm}$  and has exceeded 20,000  $\mu\text{mhos/cm}$  in some monitoring wells. The shallow groundwater at the Site may not be suitable as a drinking water resource. The area is served by Marin Municipal Water District.

ESLs for non-potable groundwater resources in a commercial/industrial scenario are used herein to screen the environmental conditions at the Site.

### **4.2 GROUNDWATER CONDITIONS**

#### **4.2.1 Petroleum Hydrocarbons**

Groundwater samples collected from three of the seven monitoring wells revealed measurable concentrations of petroleum hydrocarbons. The concentrations remain similar to or lower than data from past quarterly monitoring events. The TPHg concentrations measured in the third quarter 2004 were below the ESL of 500  $\mu\text{g/L}$  for non-potable groundwater resources. The MTBE concentrations measured in the third quarter 2004 were below the ESL of 1,800  $\mu\text{g/L}$  for non-potable groundwater resources. The interpreted distribution of TPHg is depicted on Plate 3.

Benzene was measured in a single well at 1.1 µg/L below the ESL of 46 µg/L for non-potable groundwater resources. The remaining petroleum hydrocarbons toluene, ethylbenzene and xylenes, and TPHd, were not measured above detection limits.

Historical trends of concentrations over time in monitoring wells MW-1 and MW-5 are depicted on Plate 4. The data show a decline in hydrocarbon concentrations over time that is independent of groundwater elevation. This decline is consistent with both limited residual petroleum hydrocarbons in the soil at the Site and natural attenuation processes.

#### **4.2.2 Natural Attenuation**

Following removal of a petroleum hydrocarbon source, passive natural microbially mediated degradation, or bioremediation, of petroleum hydrocarbons usually acts to advance the cleanup passively (LLNL, 1995). The microbes will preferentially perform aerobic respiration to metabolize petroleum hydrocarbons. Aerobic respiration consumes oxygen (O<sub>2</sub>) as the electron acceptor and produces carbon dioxide (CO<sub>2</sub>). Based on these processes, bioremediation processes would generally decrease concentrations of oxygen in ground water. As dissolved oxygen is depleted and the system becomes anaerobic, the following electron acceptors and processes are preferentially used by the microbes: denitrification utilizes nitrate (NO<sub>3</sub><sup>-1</sup>) and produces nitrite (NO<sub>2</sub>) and carbon dioxide, iron reduction utilizes ferric iron (Fe<sup>+3</sup>) and produces ferrous iron (Fe<sup>+2</sup>) and carbon dioxide, sulfate reduction utilizes sulfate (SO<sub>4</sub><sup>-2</sup>) and produces sulfide and carbon dioxide, and finally methanogenesis produces methane (CH<sub>4</sub>) and carbon dioxide (USEPA, 1998).

## **5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

Quarterly groundwater monitoring for the third quarter of 2004 was performed on September 24, 2004. The groundwater samples revealed concentrations of petroleum hydrocarbons below ESLs for non-potable water resources. In addition, concentrations of TPHg in groundwater continue to decline over time and suggest natural attenuation processes.

Overall, TPHg concentrations are below historical highs and the plume has remained relatively stable for four quarters. Based on the data, we recommend the RWQCB consider no further action for the Site.

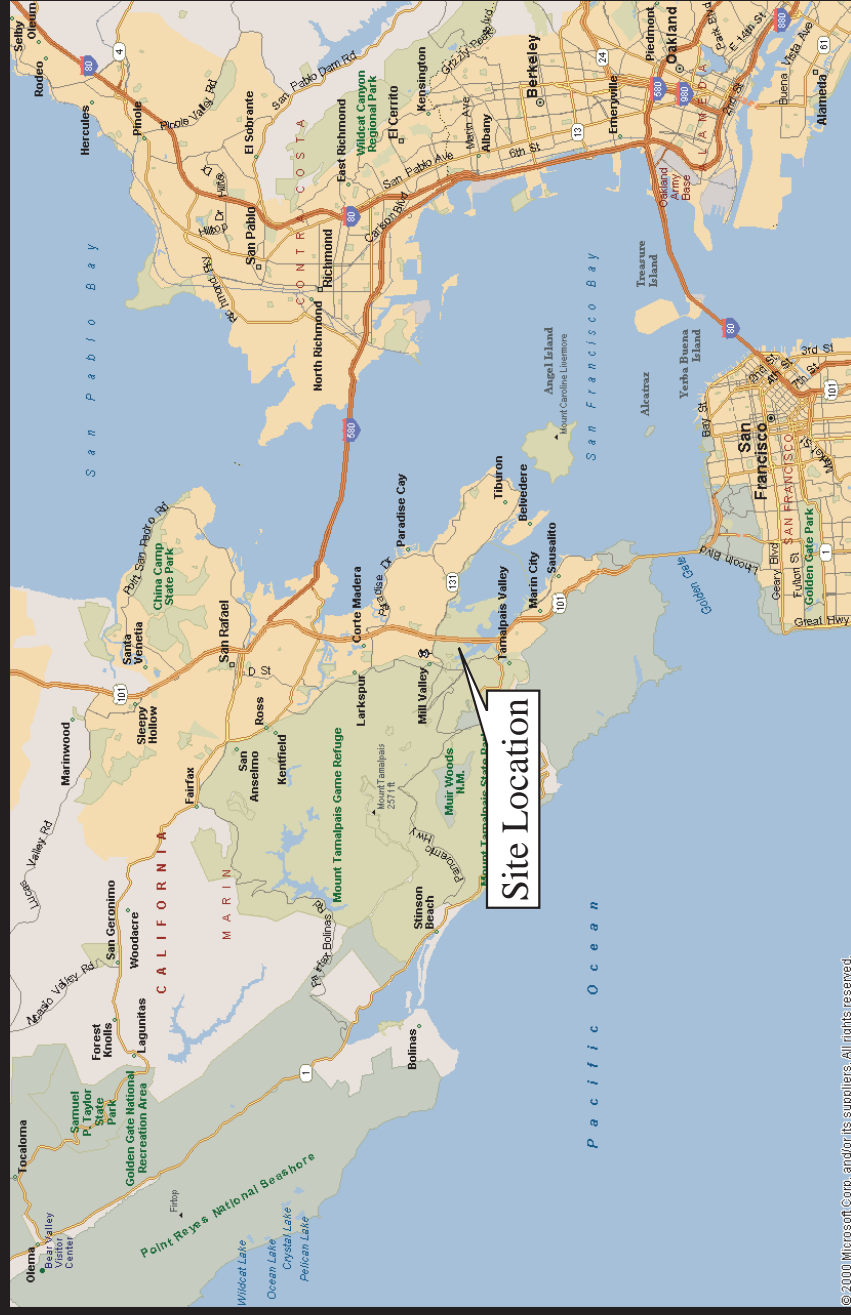
## **SELECTED REFERENCES**

- American Society for Testing and Materials. *Standard Guide for Representative Sampling for Management of Waste and Contaminated Media*. ASTM Designation D 6044-96. January 1997.
- California State Water Resources Control Board, San Francisco Bay Region. *Resolution No. 88-63, Adoption of Policy Entitled "Sources Of Drinking Water"*. 1988.
- California Regional Water Quality Control Board, San Francisco Bay Region. *San Francisco Basin – Water Quality Control*. 1995.
- California Regional Water Quality Control Board, San Francisco Bay Region. *Memorandum - Regional Board Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Fuel Sites*. January 5, 1996.
- California State Water Resources Control Board, San Francisco Bay Region. *Draft Staff Report, Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines*. May 2000
- California Regional Water Quality Control Board, San Francisco Bay Region. *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater*. Interim Final Report, July 2003.
- Environmental Geology Services. *Interim remedial Action, 5 Ashford Avenue, Mill Valley, California*. June 14, 1999.
- Environmental Resource Group, Inc. *Ground Water Monitoring, 1st Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California*. May 2004.
- Environmental Resource Group, Inc. *Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California*. February 2003.
- Environmental Resource Group, Inc. *Ground Water And Creek Sediment Investigation and 2nd And 3rd Quarter 2001 Ground Water Monitoring*. September 2001.
- Environmental Resource Group, Inc. *Work Plan to Investigate Ground Water and Creek Sediment*. April 2001.
- Environmental Resource Group, Inc. *Ground Water Monitoring Report for October 2000*. December 8, 2000.
- EnviroNet Consulting, Inc. *Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California*. April 1, 1998.
- Lawrence Livermore National Laboratory. *Groundwater Investigation and Remediation, LLNL Environmental Report for 1998*. 1998.
- Lawrence Livermore National Laboratory. *Recommendations to Improve the Cleanup Processes for California's Leaking Underground Fuel Tanks*. October 16, 1995.
- Sierra Environmental Services. *Phase II Subsurface Investigation, Redwood Service Station #116, 5 Ashford, Mill Valley, California*. April 3, 1991.
- Sierra Environmental Services. *Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California*. September 28, 1990.
- State Water Resources Control Board. *Resolution No. 1021b, (Draft) Policy for Investigation and Cleanup of Petroleum Discharges to Soil and Groundwater*. November 1996.
- United States Environmental Protection Agency. *Monitored Natural Attenuation for Groundwater*. September 1998.

*Groundwater Monitoring 3<sup>rd</sup> Quarter 2004 Report*  
*Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California*  
*January 2005*

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# PLATES



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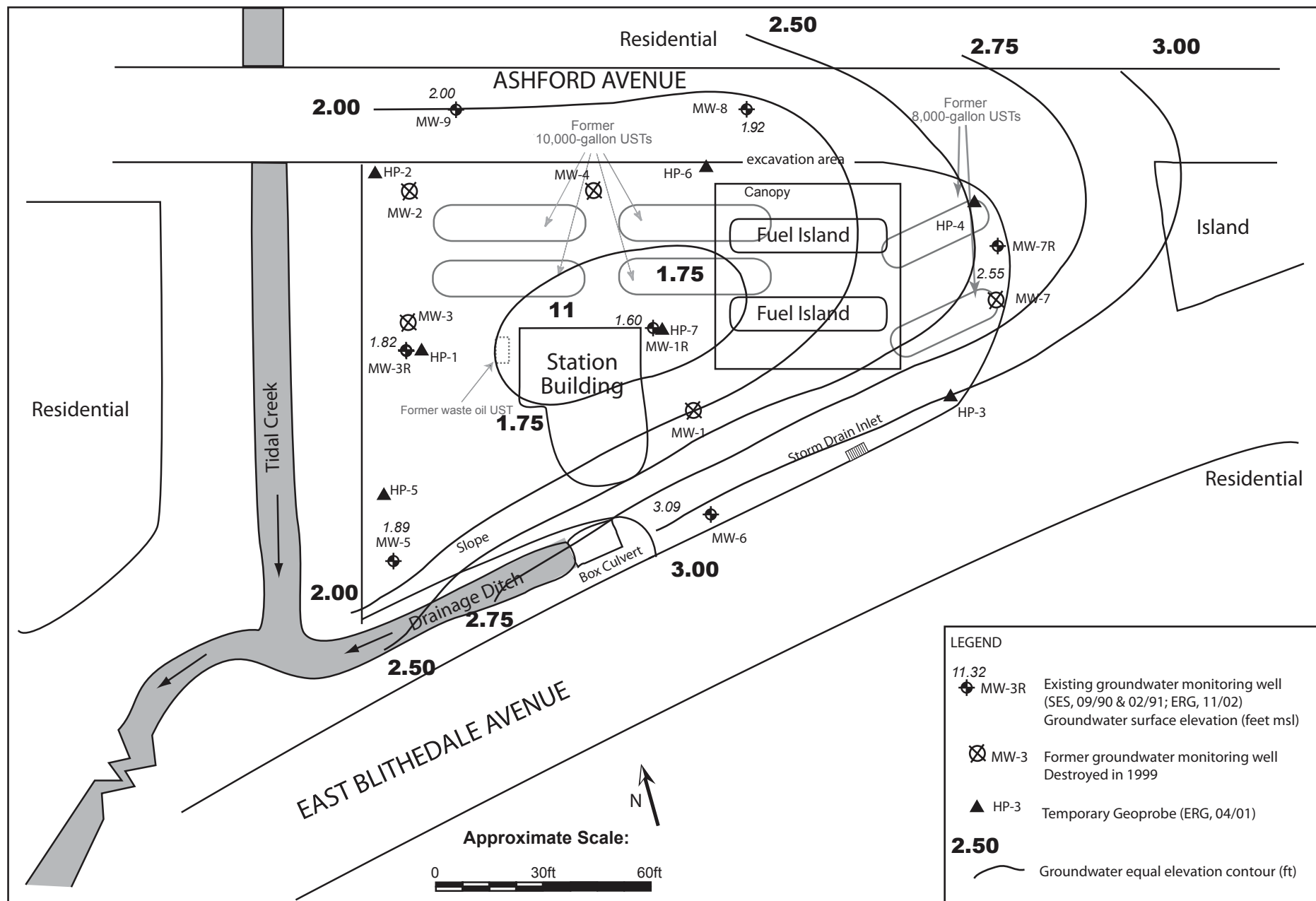
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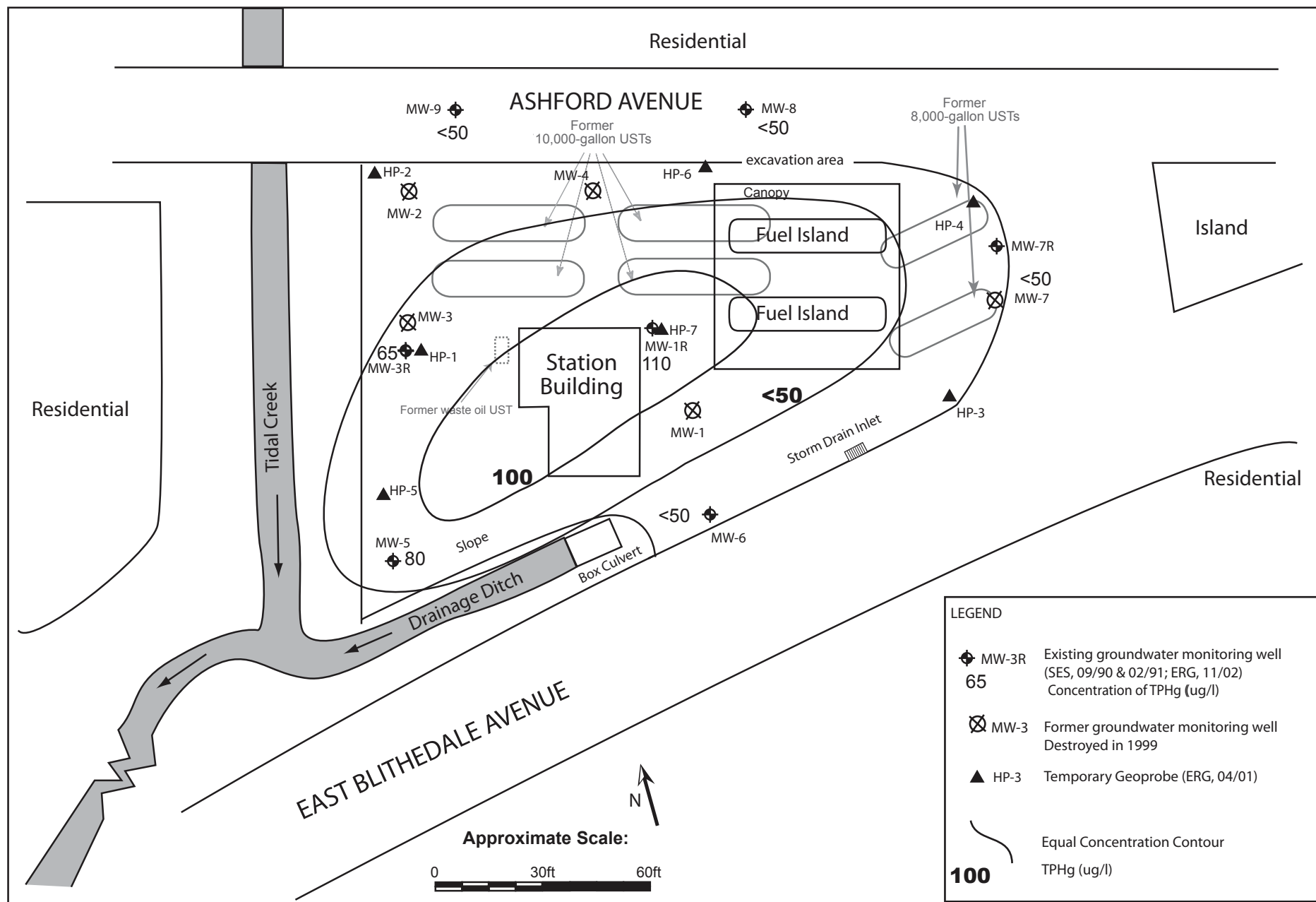
**ALFA GAS STATION**  
5 Ashford Avenue, Mill Valley, California

**5 Ashford Avenue, Mill Valley, California**

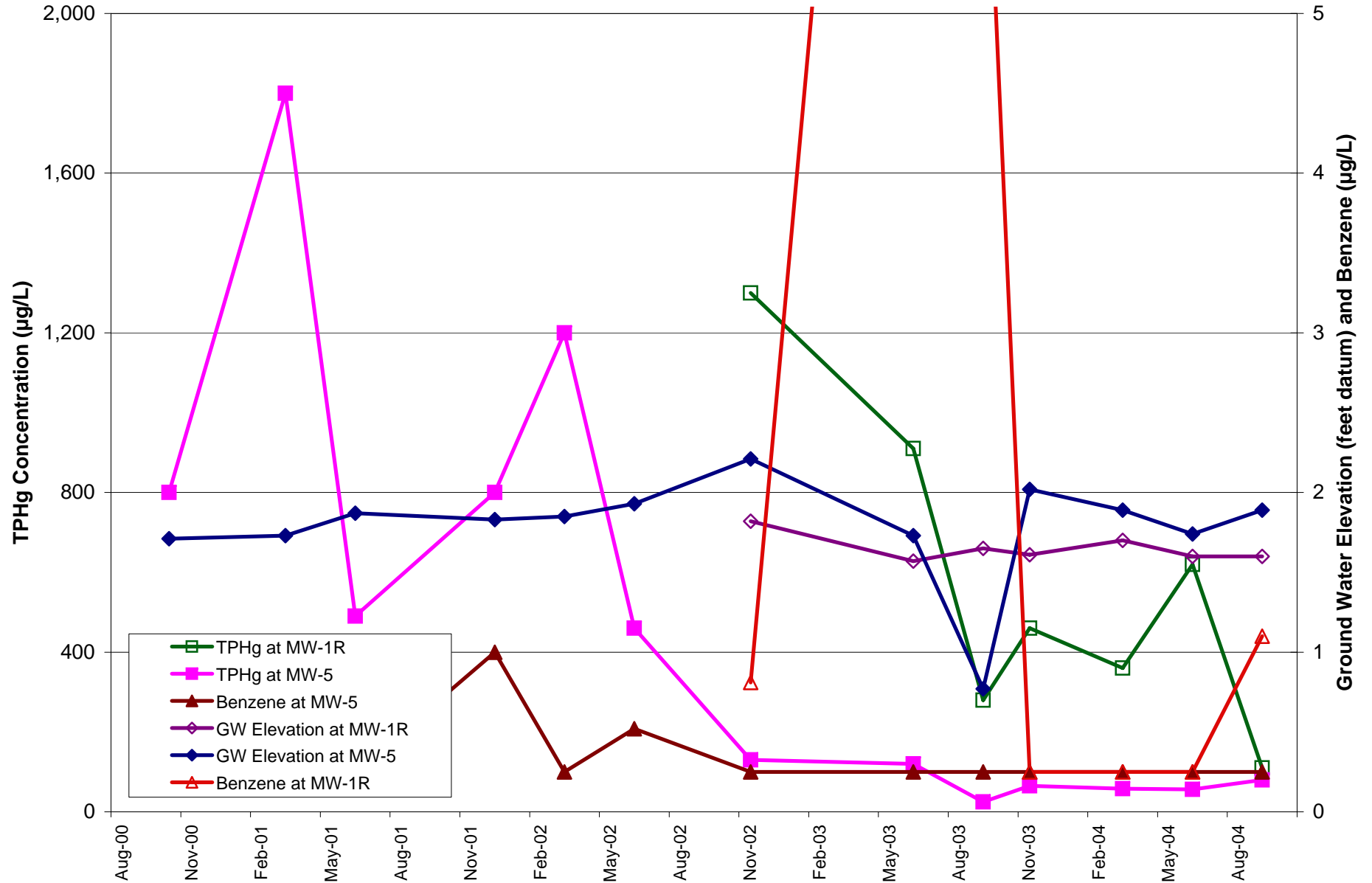
# Plate 1.

## Site Location





**Plate 4**  
**TPHg and Groundwater Elevation in MW-1 and MW-5**  
**ALFA Gas Station, 5 Ashford Avenue, Mill Valley, California**



# **TABLES**

**Table 1**  
**Groundwater Elevations and Observations,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California**

Well:	MW-1R		MW-3R		MW-5		MW-6		MW-7R		MW-8		MW-9	
TOC :	5.95		5.74		5.44		6.89		6.00		6.32		6.10	
Screened Interval:	8 to 15 feet		9 to 15 feet		3.5 to 13.5 feet		3.5 to 13.5 feet		8 to 15 feet		3.5 to 13.5 feet		4 to 12 feet	
Date	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE	DTW	GE
10/04/00	--	--	--	--	3.73	1.71	4.34	2.55	--	--	4.28	2.04	4.27	1.83
03/30/01	--	--	--	--	3.71	1.73	4.22	2.67	--	--	4.49	1.83	4.09	2.01
06/28/01	--	--	--	--	3.57	1.87	4.10	2.79	--	--	4.26	2.06	4.22	1.88
12/11/01	--	--	--	--	3.61	1.83	3.96	2.93	--	--	3.81	2.51	3.19	2.91
03/28/02	--	--	--	--	3.59	1.85	4.15	2.74	--	--	4.21	2.11	3.63	2.47
06/26/02	--	--	--	--	3.51	1.93	3.80	3.09	--	--	4.00	2.32	3.94	2.16
11/19/02	4.13	1.82	3.61	2.13	3.23	2.21	3.96	2.93	11.21	-5.21	4.15	2.17	3.21	2.89
06/25/03	4.38	1.57	3.95	1.79	3.71	1.73	3.85	3.04	3.18	2.82	4.89	1.43	4.47	1.63
09/25/03	4.30	1.65	4.91	0.83	4.67	0.77	3.90	2.99	3.61	2.39	4.38	1.94	4.00	2.1
11/04/03	4.34	1.61	3.84	1.90	3.42	2.02	5.04	1.85	4.83	1.17	4.16	2.16	3.78	2.32
03/24/04	4.25	1.70	3.75	1.99	3.55	1.89	3.50	3.39	3.32	2.68	4.10	2.22	3.75	2.35
06/14/04	4.35	1.60	3.90	1.84	3.70	1.74	3.60	3.29	3.10	2.90	4.35	1.97	4.10	2.00
09/24/04	4.35	1.60	3.92	1.82	3.55	1.89	3.80	3.09	3.45	2.55	4.40	1.92	4.10	2.00

**Notes:**

DTW: Depth to water in feet below top of well casing.

GE: Groundwater elevation = top of well casing elevation minus depth-to-water.

TOC: Surveyed elevation of top of casing in feet by Luk & Associates, December 2003 (ERG, January 2005)

Screen Interval: Screened interval in feet below ground surface

**Source**

10/4/00: Environmental Resource Group, Inc. (ERG, December 8, 2000): "Ground Water Monitoring Report for October 2000, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

3 & 6/01: ERG (September 2001): "Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

12/11/01: ERG (February 2002): "Ground Water Monitoring, 4th Quarter 2001, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

2002: ERG (February 2003): "Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

6/25/03: ERG (September 2003): "Ground Water Monitoring, 2nd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

9/25/03: ERG (December 2003): "Ground Water Monitoring, 3rd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

11/4/03: ERG (March 2004): "Ground Water Monitoring, 4th Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

3/24/04: ERG (May 2004): "Ground Water Monitoring, 1st Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

6/14/04: ERG (October 2004): "Ground Water Monitoring, 2nd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

9/24/04: ERG (January 2005): "Ground Water Monitoring, 3rd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

**Table 2**  
**Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA**

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-1	9/12/90 <sup>1</sup>	<50	410	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	12/13/90 <sup>2</sup>	520	230	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	<50	190	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	110	<500	0.6	<0.5	<0.5	0.6	--	--	--	--	--	--
	09/12/91	<50	<50	<500	1.2	1.3	<0.5	1.8	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	1,300 <sup>8</sup>	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	36	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<50	2,410 <sup>5</sup>	2,370 <sup>4</sup>	<0.5	<0.5	<0.5	<0.5	6.92	--	--	--	--	<5.0
MW-1R	11/19/02	1,300	560	<200	0.81	<0.5	0.67	<1.5	510	820	<10	<10	16	--
	06/25/03	910 <sup>10</sup>	160	<200	12	0.71	<0.5	<1.5	880	<250	<10	<10	28	--
	09/25/03	280	64	<200	6.8	<0.5	<0.5	<1.5	400	<250	<10	<10	<10	--
	11/04/03	460 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	450	<250	<10	<10	12	--
	03/24/04	360 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	350	<250	<10	<10	7.7	--
	06/14/04	620 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	420	190	<5.0	<5.0	12	--
	09/24/04	110 <sup>10</sup>	<50	--	1.1	<0.5	<0.5	<1.5	110	--	--	--	--	--
MW-2	9/12/90 <sup>1</sup>	90	320	<500	<0.5	<0.5	<0.5	0.55	--	--	--	--	--	--
	12/30/90	130	340	<500	4.4	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	70	280	<500	3.0	0.5	<0.5	1.0	--	--	--	--	--	--
	06/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.3	--	--	--	--	--	--
	04/27/93	<50	2,100 <sup>8</sup>	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	<50	610 <sup>5</sup>	<250	<2.5	<2.5	<2.5	<2.5	230	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<250	596 <sup>5</sup>	<250	<2.5	<2.5	<2.5	<2.5	460	--	--	--	--	<5.0
MW-3	9/12/90 <sup>1</sup>	<50	230	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	12/30/90	<50	210	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	03/13/91	60	240	<500	1.5	0.9	<0.5	2.5	--	--	--	--	--	--
	06/12/91	<50	140	<500	1.2	<0.5	<0.5	<0.5	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	<50	33	<250	<0.5	<0.5	<0.5	<0.5	1.8	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<50	1,560	<250	<0.5	<0.5	<0.5	<0.5	5.23	--	--	--	--	<5.0
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

**Table 2**  
**Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA**

Well	Date	TPH <sub>g</sub>	TPH <sub>d</sub>	TPH <sub>mo</sub>	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-3R	11/19/02	370	<50	<200	<0.5	<0.5	<0.5	<1.5	150	220	<2.5	<2.5	3.4	--
	06/25/03	160 <sup>10</sup>	<50	<200	2.0	<0.5	<0.5	<1.5	160	<50	<2.0	<2.0	2.7	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	35	<50	<2.0	<2.0	<2.0	--
	11/04/03	140 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	140	<50	<2.0	<2.0	2.4	--
	03/24/04	75 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	75	<50	<2.0	<2.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<50	40	<2.0	<2.0	<2.0	--
	09/24/04	65 <sup>10</sup>	<50	--	<0.5	<0.5	<0.5	<1.5	65	--	--	--	--	--
MW-4	9/12/90 <sup>1</sup>	14,000	1,800	<500	2,200	660	200	870	--	--	--	--	--	--
	12/30/1990	540	730	<500	94	2.3	<0.5	3.3	--	--	--	--	--	--
	03/13/91	28,000	2,400	<500	900	100	1,800	4,200	--	--	--	--	--	--
	06/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	09/12/91	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/25/92	270	1,600	--	47	0.74	3	1.5	--	--	--	--	--	--
	04/27/93	<50	14,000 <sup>7,8</sup>	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	27,000	560 <sup>5</sup>	<500	840	<5	27	<5	23,000	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<500	1,990 <sup>5</sup>	4,560 <sup>4</sup>	7.19	<5	<5	<5	991	--	--	--	--	<5.0
MW-5	2/20/91 <sup>1</sup>	<50	100	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	09/12/91	<50	<50	800	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	780 <sup>8</sup>	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	2,300	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<50	329 <sup>5</sup>	<263	<0.5	<0.5	<0.5	<0.5	4,320 <sup>9</sup>	--	--	--	--	<5.0
	10/04/00	800 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	790	<1,000	<50	<50	<50	<100
	03/30/01	1,800 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	1,800	<500	<20	<20	<20	--
	06/28/01	490 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	490	<500	<20	<20	<20	--
	12/11/01	800 <sup>10</sup>	<50	<200	1.0	<0.5	<0.5	<1.5	500	310	<5.0	<5.0	<5.0	--
	03/28/02	1,200	<50	<200	<0.5	<0.5	<0.5	<1.5	360	810	<1.0	<1.0	1.0	--
	06/26/02	460 <sup>10</sup>	<50	<200	0.52	<0.5	<0.5	<1.5	460	<25	<1.0	<1.0	1.1	--
	11/19/02	130	<50	<200	<0.5	<0.5	<0.5	<1.5	54	75	<1.0	<1.0	<1.0	--
	06/25/03	120 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	120	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	65	<25	<1.0	<1.0	<1.0	--
	11/04/03	65 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	65	<25	<1.0	<1.0	<1.0	--
	03/24/04	58 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	58	<25	<1.0	<1.0	<1.0	--
	06/14/04	56 <sup>10</sup>	<50	<200	<0.5	<0.5	<0.5	<1.5	56	<25	<1.0	<1.0	<1.0	--
	09/24/04	80 <sup>10</sup>	<50	--	<0.5	<0.5	<0.5	<1.5	80	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

**Table 2**  
**Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA**

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-6	2/20/91 <sup>1</sup>	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	<b>110</b>	<500	<b>1.2</b>	<b>0.9</b>	<b>0.8</b>	<b>1.1</b>	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<b>0.7</b>	<b>0.9</b>	<0.5	<b>1.2</b>	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	<b>130</b> <sup>8</sup>	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	<50	<50	<250	<0.5	<0.5	<0.5	<0.5	<b>36</b>	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<50	<b>180</b> <sup>5</sup>	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<b>7.3</b>	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	<b>87</b>	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<b>5.4</b>	--	--	--	--	--
MW-7	2/20/91 <sup>1</sup>	<b>390</b>	<b>1,100</b>	<500	<b>1.4</b>	<b>0.6</b>	<b>0.6</b>	<b>1.5</b>	--	--	--	--	--	--
	06/12/91	<b>8,200</b>	<b>1,400</b>	<b>5,400</b>	<b>2,300</b>	<b>35</b>	<b>720</b>	<b>150</b>	--	--	--	--	--	--
	09/12/91	<b>3,700</b>	<b>550</b>	<500	<b>300</b>	<b>17</b>	<b>210</b>	<b>67</b>	--	--	--	--	--	--
	08/25/92	<b>2,150</b>	<50	--	<b>1,770</b>	<b>16</b>	<b>92</b>	<b>34</b>	--	--	--	--	--	--
	04/27/93	<b>6,700</b>	<b>2,200</b> <sup>7,8</sup>	--	<b>3,300</b>	<b>16</b>	<b>250</b>	<b>68</b>	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	<b>17,000</b>	<b>1,500</b> <sup>5,6</sup>	<250	<b>1,900</b>	<b>29</b>	<b>25</b>	<b>17</b>	<b>7,100</b>	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<b>7,520</b>	<b>1,240</b> <sup>5,6</sup>	<b>264</b> <sup>4</sup>	<b>1,200</b>	<b>32.2</b>	<b>23.2</b>	<b>25.0</b>	<b>3,320</b>	--	--	--	--	<5.0
MW-7R	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<b>7.2</b>	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<b>3.2</b>	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<b>0.63</b>	<b>0.70</b>	<0.5	<1.5	<b>21</b>	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<b>0.51</b>	<0.5	<1.5	<b>9.9</b>	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<b>8.9</b>	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<b>3.4</b>	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<b>15</b>	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

**Table 2**  
**Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA**

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
MW-8	2/20/91 <sup>1</sup>	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	<b>60</b>	<500	<b>1.0</b>	<b>0.6</b>	<b>0.5</b>	<b>0.7</b>	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	<b>90</b> <sup>8</sup>	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	<50	<b>76</b> <sup>5</sup>	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<50	<b>411</b> <sup>5</sup>	<263	<0.5	<0.5	<0.5	<0.5	<b>3.56</b>	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<1.0	--	--	--	--	--
MW-9	2/20/91 <sup>1</sup>	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	06/12/91	<50	<50	<500	<b>0.9</b>	<b>0.6</b>	<0.5	<b>0.7</b>	--	--	--	--	--	--
	09/12/91	<50	<50	<500	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	08/25/92	<50	<50	--	<0.3	<0.3	<0.3	<0.6	--	--	--	--	--	--
	04/27/93	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--	--	--	--	--	--
	2/27/98 <sup>3</sup>	<50	<b>80</b>	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	6/23/98 <sup>3</sup>	<50	<b>180</b>	<250	<0.5	<0.5	<0.5	<0.5	<2.0	--	--	--	--	<5.0
	10/04/00	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<2.0	<50	<2.0	<2.0	<2.0	<100
	03/30/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/28/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	12/11/01	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/28/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/26/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/19/02	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/25/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	11/04/03	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	03/24/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	06/14/04	<50	<50	<200	<0.5	<0.5	<0.5	<1.5	<1.0	<25	<1.0	<1.0	<1.0	--
	09/24/04	<50	<50	--	<0.5	<0.5	<0.5	<1.5	<1.0	--	--	--	--	--
SF Bay RWQCB Environmental Screening Levels (Table F-1b)														
Gross Contamination Ceiling Value		5,000	2,500	2,500	20,000	400	300	5,300	1,800	50,000	NE	NE	NE	50,000
Vapor Intrusion Into Buildings		Use Soil Gas	Use Soil Gas	N/A	540	380,000	170,000	160,000	24,000	Use Soil Gas	NE	NE	NE	N/A
Estuary Aquatic Habitat Goal		500	640	640	46	130	290	100	8,000	18,000	NE	NE	NE	2.5

**Table 2**  
**Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA**

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

**Notes:**

**General**

µg/L	Micrograms per liter (parts per billion equivalent)
mg/L	Milligrams per liter (parts per million equivalent)
<50	Not detected at or above laboratory detection limit
--	Not analyzed
NE	Not established
N/A	Not applicable
TPHg	Total purgeable petroleum hydrocarbons as gasoline by Environmental Protection Agency (EPA) Method 8015M
TPHd	Total extractable petroleum hydrocarbons as diesel by EPA Method 8015M
TPHmo	Total extractable petroleum hydrocarbons as motor oil by EPA Method 8015M
BTEX	Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020/602
MTBE	Methyl-tert-butyl-ether by EPA Method 8260M/8260B, except by EPA Method 8020 for the 1998 sampling event
TBA	Tert-butyl alcohol by EPA Method 8260M/8260B
DIPE	Di-isopropyl ether by EPA Method 8260M/8260B
ETBE	Ethyl tert-butyl ether by EPA Method 8260M/8260B
TAME	Tert-amyl methyl ether by EPA Method 8260M/8260B
Lead	Dissolved lead by EPA Method 7421

Environmental screening levels (ESLs) were taken from the San Francisco Bay Region, Regional Water Quality Control Board (SF Bay RWQCB, February 2005): "Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,"

Table F1-b with ESL updates and corrections, where groundwater IS NOT a current or potential source of drinking water

TPHd: ESL for TPH (middle distillates)

TPHmo: ESL for TPH (residual fuels)

TPHg: ESL for TPH (gasoline)

**Detail**

- 1 The initial samples from Wells MW-1 through MW-9 were analyzed for organic lead by DHC LUFT Method. Analytical results were ND (<2,000 µg/L).
- 2 The 12/13/90 sample from Well MW-1 was also analyzed for chloride by EPA Method 300 and total dissolved solids (TDS) by EPA Method 160.1. Analytical results were 15,000 milligrams per liter (mg/L) chloride and 27,000 mg/L TDS.
- 3 During the 02/27/98 and 06/23/98 groundwater sampling events, the groundwater samples were collected without purging the wells prior to sampling. Thus, these samples grab samples of groundwater from the wells.
- 4 The laboratory reported the hydrocarbon pattern present in the requested fuel quantitation range does not resemble the fuel pattern.
- 5 The laboratory reported the results in the diesel organics range are primarily due to overlap from a heavy oil range product.
- 6 The laboratory reported the results in the diesel organics range are primarily due to overlap from a gasoline range product.
- 7 The Laboratory reported the positive result for petroleum hydrocarbons as diesel appears to be due to the presence of heavier hydrocarbons rather than diesel.
- 8 The laboratory reported the positive result for petroleum hydrocarbons as diesel appears to be due to a combination of heavier and lighter hydrocarbons rather than diesel.
- 9 According to the laboratory, the results was analyzed outside of the EPA recommended holding time.
- 10 According to the laboratory, the TPHg result consists almost exclusively or primarily of MTBE.

**Table 2**  
**Groundwater Monitoring Analytical Results - Petroleum Hydrocarbons,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA**

Well	Date	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethyl Benzene	Total Xylenes	MTBE	TBA	DIPE	ETBE	TAME	Lead
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L

**Notes (Continuation):**

**Source**

9/12/90: Sierra Environmental Services (SES, September 28, 1990): "Subsurface Investigation, Redwood Oil Service Station, 5 Ashford, Mill Valley, California."

12/13/90: SES (January 7, 1991): "Redwood Oil Service Station, 5 Ashford, Mill Valley, California."

3/13/91: SES (April 3, 1991): "Phase II Subsurface Investigation, Redwood Service Station #116, 5 Ashford, Mill Valley, California."

6/12/91: SES (July 10, 1991): "Redwood Oil Service Station, 5 Ashford, Mill Valley, California."

9/12/91: SES (October 7, 1991): "Redwood Oil Service Station, 5 Ashford, Mill Valley, California."

1992-1993: SES (May 26, 1993): "5 Ashford, Mill Valley, California."

2/27/98: EnviroNet Consulting (EnviroNet, April 1, 1998): "Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California."

6/23/98: EnviroNet (August 24, 1998): "Quarterly Groundwater Monitoring Report for 5 Ashford Avenue, Mill Valley, California."

10/4/00: Environmental Resource Group, Inc. (ERG, December 8, 2000): "Ground Water Monitoring Report for October 2000, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

3 & 6/01: ERG (September 2001): "Ground Water And Creek Sediment Investigation and 2nd and 3rd Quarter 2001 Ground Water Monitoring, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

12/11/01: ERG (February 2002): "Ground Water Monitoring, 4th Quarter 2001, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

2002: ERG (February 2003): "Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

6/25/03: ERG (September 2003): "Ground Water Monitoring, 2nd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

9/25/03: ERG (December 2003): "Ground Water Monitoring, 3rd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

11/4/03: ERG (March 2004): "Ground Water Monitoring, 4th Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

3/24/04: ERG (May 2004): "Ground Water Monitoring, 1st Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

6/14/04: ERG (October 2004): "Ground Water Monitoring, 2nd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

9/24/04: ERG (January 2005): "Ground Water Monitoring, 3rd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."

**Table 3**  
**Groundwater Monitoring Analytical Results - Natural Attenuation Parameters,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA**

Sample	Date	Dissolved Oxygen (O <sub>2</sub> )	Carbon Dioxide (CO <sub>2</sub> )	Nitrate (NO <sub>3</sub> <sup>-1</sup> )	Sulfate (SO <sub>4</sub> <sup>-2</sup> )	Ferrous Iron (Fe+2)	Methane	Total Alkalinity	pH	Electrical Conductivity
		mg/L	mg CO <sub>2</sub> /L	mg/L	mg/L	mg/L	mg/L	mg CaCO <sub>3</sub> /L	S.U.	µmhos /cm
MW-5	26-Jun-02		410	--	--	--	<1,000	1,300	6.8	--
MW-6			210	--	--	--	<1,000	850	6.9	--
MW-8			1,100	--	--	--	<1,000	3,400	6.8	--
MW-9			7.9	--	--	--	<1,000	250	6.8	--
MW-1R	19-Nov-02	--	--	--	--	--	--	--	6.99	5,200
MW-3R		--	--	--	--	--	--	--	6.92	5,540
MW-5		--	--	--	--	--	--	--	8.10	8,430
MW-6		--	--	--	--	--	--	--	--	8,430
MW-7R		--	--	--	--	--	--	--	--	5,260
MW-8		--	--	--	--	--	--	--	--	4,300
MW-9		--	--	--	--	--	--	--	--	5,890
MW-1R	25-Jun-03	1.4	140	0.93	750	9.9	3,800	1,900	7.59	18,440
MW-3R		1.8	740	0.58	270	11	1,800	1,500	6.71	14,630
MW-5		1.3	210	1.2	6.1	2	<500	510	6.64	11,180
MW-6		1.5	210	1.4	1,100	<0.50	3,200	1,400	7.35	15,540
MW-7R		2.3	770	1.3	1,400	<0.50	<500	2,500	7.21	20,000+
MW-8		1.0	480	1.5	94	37	680	3,400	6.66	20,000+
MW-9		3.3	70	1.2	220	<0.50	<500	360	6.71	14,800
MW-1R	25-Sep-03	--	--	--	--	--	--	--	6.19	11,520
MW-3R		--	--	--	--	--	--	--	6.40	10,100
MW-5		--	--	--	--	--	--	--	6.91	7,080
MW-6		--	--	--	--	--	--	--	6.61	10,790
MW-7R		--	--	--	--	--	--	--	6.25	13,630
MW-8		--	--	--	--	--	--	--	5.93	17,960
MW-9		--	--	--	--	--	--	--	6.60	13,470
MW-1R	4-Nov-03	1.1	--	--	--	--	--	--	6.66	7,180
MW-3R		1.6	--	--	--	--	--	--	6.83	6,020
MW-5		2.2	--	--	--	--	--	--	6.35	5,800
MW-6		1.1	--	--	--	--	--	--	6.50	7,280
MW-7R		1.7	--	--	--	--	--	--	7.10	10,230
MW-8		1.8	--	--	--	--	--	--	5.66	13,920
MW-9		2.9	--	--	--	--	--	--	6.89	9,620
MW-1R	24-Mar-04	1.0	--	--	--	--	--	--	6.10	13,650
MW-3R		1.5	--	--	--	--	--	--	5.74	14,000
MW-5		1.0	--	--	--	--	--	--	6.40	3,860
MW-6		0.9	--	--	--	--	--	--	5.85	13,240
MW-7R		1.4	--	--	--	--	--	--	5.84	16,240
MW-8		0.9	--	--	--	--	--	--	4.70	20,000+
MW-9		1.9	--	--	--	--	--	--	7.12	7,530
MW-1R	14-Jun-04	0.3	--	--	--	--	--	--	5.94	19,290
MW-3R		0.4	--	--	--	--	--	--	5.94	19,510
MW-5		0.5	--	--	--	--	--	--	6.25	10,040
MW-6		0.5	--	--	--	--	--	--	6.17	20,000+
MW-7R		1.5	--	--	--	--	--	--	4.89	20,000+
MW-8		0.7	--	--	--	--	--	--	6.39	20,000+
MW-9		1.6	--	--	--	--	--	--	6.98	20,000+
MW-1R	24-Sep-04	0.7	--	--	--	--	--	--	6.72	15,550
MW-3R		0.3	--	--	--	--	--	--	6.61	17,520
MW-5		0.4	--	--	--	--	--	--	6.58	14,060
MW-6		--	--	--	--	--	--	--	6.72	16,490
MW-7R		0.7	--	--	--	--	--	--	--	20,000+
MW-8		1.4	--	--	--	--	--	--	--	20,000+
MW-9		1.4	--	--	--	--	--	--	6.85	20,000+

**Table 3**  
**Groundwater Monitoring Analytical Results - Natural Attenuation Parameters,**  
**Alfa Gas Station, 5 Ashford Avenue, Mill Valley, CA**

**Notes:**

**General**

Dissolved Oxygen (O <sub>2</sub> ):	Based on field instrument measurement in milligrams per liter (mg/L)
Carbon dioxide (CO <sub>2</sub> ):	SM 4500 in milligrams of CO <sub>2</sub> per liter (mg CO <sub>2</sub> /L)
Nitrate (NO <sub>3</sub> <sup>-1</sup> ):	EPA 300 (IC) in mg/L
Sulfate (SO <sub>4</sub> <sup>-2</sup> ):	EPA 300 (IC) in mg/L
Ferrous iron (Fe <sup>+2</sup> ):	SM 3500 in mg/L
Methane:	EPA 8015M in mg/L
Total alkalinity:	EPA 310.1 in milligrams of CaCO <sub>3</sub> per liter (mg CaCO <sub>3</sub> /L)
pH:	EPA 150.1 in standard units (S.U.)
Elect conductivity:	Based on field instrument measurement in micromhos per centimeter (µmhos /cm)
--	Not analyzed/not reported

**Source**

2002:	ERG (February 2003): <i>"Monitor Well and Creek Bank Sampling, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."</i>
6/25/03:	ERG (September 2003): <i>"Ground Water Monitoring, 2nd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."</i>
9/25/03:	ERG (December 2003): <i>"Ground Water Monitoring, 3rd Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."</i>
11/4/03:	ERG (March 2004): <i>"Ground Water Monitoring, 4th Quarter 2003, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."</i>
3/24/04:	ERG (May 2004): <i>"Ground Water Monitoring, 1st Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."</i>
6/14/04:	ERG (October 2004): <i>"Ground Water Monitoring, 2nd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."</i>
9/24/04:	ERG (January 2005): <i>"Ground Water Monitoring, 3rd Quarter 2004, Alfa Gas Station, 5 Ashford Avenue, Mill Valley, California."</i>

# **APPENDIX A**

# **FIELD DATA SHEETS**

## WATER LEVEL MEASUREMENTS

Project Name: 5 Ashford @ 3 GW Monitoring  
Field Personnel: Donna Manning  
General Observations: Clear, sunny, warm

Project No.: 5Ash

Date: 9/24/04

Meter Type: Salinast

[illegible]

## WATER QUALITY SAMPLING INFORMATION

Date: 9/24/04 Well No: MW-1R Sampled by: D. Manning/Ben Wells  
Project: S Ashford Q3 Monitoring Project No: 5 Ash  
Sampling method: Disposable bailer


## GROUNDWATER

Well diameter (in.) \_\_\_\_\_  
Well elevation (ft.) \_\_\_\_\_  
Depth to static water (ft.) 4.35  
Water level elevation (ft.) \_\_\_\_\_  
Well casing depth (ft.) 14.85  
Water volume in well (gals) \_\_\_\_\_  
Pump inlet depth (ft.) \_\_\_\_\_

SURFACE WATER

Stream width (ft.) \_\_\_\_\_  
Stream depth (ft.) \_\_\_\_\_  
Stream velocity (cfs.) \_\_\_\_\_  
Rained Recently (?) \_\_\_\_\_  
2-in. Casing=0.16 gals/ft.  
4-in. Casing=0.65 gals/ft  
6-in Casing=1.47 gals/ft

### Sketch of Well Location



Analyses requested: TPH<sub>8</sub> / BTX, MTBE, TPH<sub>11</sub>

No. & types of sample bottles used: 4 Vials 1 Amber

Method of shipment: Cooler

[illegible]

## WATER QUALITY SAMPLING INFORMATION

Date: 9/24/04 Well No: MW-3R Sampled by: D. Mahring / Balogh  
Project: 5 Ash for a 36W Monitoring Project No: 5 Ash  
Sampling method: Disposable Boiler

## GROUNDWATER

## SURFACE WATER

### Sketch of Well Location

Well diameter (in.) \_\_\_\_\_  
Well elevation (ft.) \_\_\_\_\_  
Depth to static water (ft.) 3.92  
Water level elevation (ft.) \_\_\_\_\_  
Well casing depth (ft.) 14.25  
Water volume in well (gals) \_\_\_\_\_  
Pump inlet depth (ft.) \_\_\_\_\_

Stream width (ft.) \_\_\_\_\_  
Stream depth (ft.) \_\_\_\_\_  
Stream velocity (cfs.) \_\_\_\_\_  
Rained Recently (?) \_\_\_\_\_  
2-in. Casing=0.16 gals/ft.  
4-in. Casing=0.65 gals/ft.  
6-in Casing=1.47 gals/ft

Analyses requested: TPH<sub>3</sub>/BTEX, TPH<sub>4</sub>, MTBE  
No. & types of sample bottles used: 4 Vials, 1 Amber

Method of shipment: Cooler

[illegible]

## WATER QUALITY SAMPLING INFORMATION

Date: 9/24/04 Well No: MW-5 Sampled by: P. Manning/Ben Wall  
Project: 5 Ash Ford B36W Monitoring Project No: 5 Ash  
Sampling method: Disposable Bailer

## GROUNDWATER

## SURFACE WATER

### Sketch of Well Location

Well diameter (in.) \_\_\_\_\_  
Well elevation (ft.) \_\_\_\_\_  
Depth to static water (ft.) 3.55  
Water level elevation (ft.) \_\_\_\_\_  
Well casing depth (ft.) 13.0  
Water volume in well (gals) \_\_\_\_\_  
Pump inlet depth (ft) \_\_\_\_\_

Stream width (ft.) \_\_\_\_\_  
Stream depth (ft.) \_\_\_\_\_  
Stream velocity (cfs.) \_\_\_\_\_  
Rained Recently (?) \_\_\_\_\_  
2-in. Casing=0.16 gals/ft.  
4-in. Casing=0.65 gals/ft.  
6-in Casing=1.47 gals/ft

4.530 2 4.5 well  
4.725 volume

Analyses requested: TPHg/BTEX, TPHd, MTBE  
No. & types of sample bottles used: 4 vials, 1 amber

Method of shipment: Code

[illegible]

Date: 9/24/04 Well No: MW-6 Sampled by: D. Manning  
Project: S Ash Ford GW Monitoring Project No: S Ash  
Sampling method: Bailor

Date: 9/24/04 Well No: MW-6 Sampled by: D. Manning  
Project: S Ash Ford GW Monitoring Project No: S Ash  
Sampling method: Bailor

SURFACE WATER

Well diameter (in.) \_\_\_\_\_  
Well elevation (ft.) \_\_\_\_\_  
Depth to static water (ft.) 3.8  
Water level elevation (ft.) \_\_\_\_\_  
Well casing depth (ft.) 13.2  
Water volume in well (gals) \_\_\_\_\_  
Pump inlet depth (ft.) \_\_\_\_\_

Stream width (ft.) \_\_\_\_\_  
Stream depth (ft.) \_\_\_\_\_  
Stream velocity (cfs.) \_\_\_\_\_  
Rained Recently (?) \_\_\_\_\_  
2-in. Casing=0.16 gals/ft.  
4-in. Casing=0.65 gals/ft  
6-in Casing=1.47 gals/ft

### Sketch of Well Location

4.512 ~ 4.8 well  
4.7 volumes

Analyses requested: TPH, BTEX, MTBE, TPHd  
No. & types of sample bottles used: 4 vials, 1 amber Method of shipment: \_\_\_\_\_

[illegible]

## WATER QUALITY SAMPLING INFORMATION

Date: 9/24/04 Well No: MW-7R Sampled by: D. Warming  
Project: 5 Ashford CW monitoring Project No: 5 Ashford  
Sampling method: Bailor

## GROUNDWATER

## SURFACE WATER

### Sketch of Well Location

Well diameter (in.) _____	Stream width (ft.) _____
Well elevation (ft.) _____	Stream depth (ft.) _____
Depth to static water (ft.) <u>3.45</u>	Stream velocity (cfs.) _____
Water level elevation (ft.) _____	Rained Recently (?) _____
Well casing depth (ft.) <u>14.6</u>	2-in. Casing=0.16 gals/ft.
Water volume in well (gals) _____	4-in. Casing=0.65 gals/ft
Pump inlet depth (ft) _____	6-in Casing=1.47 gals/ft

5.260  
5.56 2.5.5 mill  
Dinner

Analyses requested: TPH<sub>8</sub>, 3TEX, MTBE, TPHd  
No. & types of sample bottles used: 4 vials 1 amber

Method of shipment: iced cooler

[illegible]

## WATER QUALITY SAMPLING INFORMATION

Date: 9/24/04 Well No: MW-8 Sampled by: D. Manning  
Project: S Ashford GW monitoring Project No: 5256  
Sampling method: Bailor

## GROUNDWATER

## SURFACE WATER

### Sketch of Well Location

Well diameter (in.) _____	Stream width (ft.) _____
Well elevation (ft.) _____	Stream depth (ft.) _____
Depth to static water (ft.) <u>4.4</u>	Stream velocity (cfs.) _____
Water level elevation (ft.) _____	Rained Recently (?) _____
Well casing depth (ft.) <u>13.1</u>	2-in. Casing=0.16 gals/ft.
Water volume in well (gals) _____	4-in. Casing=0.65 gals/ft
Pump inlet depth (ft) _____	6-in Casing=1.47 gals/ft

A large, empty rectangular frame with a thin black border, occupying the lower half of the page. It appears to be a placeholder for a drawing or diagram related to the text above it.

Analyses requested: TPH<sub>3</sub> + BTEX, MTBE, TALL  
No. & types of sample bottles used: 4 Vials 1 amber

Method of shipment: air[illegible]

## WATER QUALITY SAMPLING INFORMATION

Date: 9/24/04 Well No: MW-9 Sampled by: D. Mammig  
Project: S Ashford GW Monitoring Project No: S Ash  
Sampling method: Bailor

## GROUNDWATER

## SURFACE WATER

### Sketch of Well Location

Well diameter (in.) _____	Stream width (ft.) _____
Well elevation (ft.) _____	Stream depth (ft.) _____
Depth to static water (ft.) <u>4.1</u>	Stream velocity (cfs.) _____
Water level elevation (ft.) _____	Rained Recently (?) _____
Well casing depth (ft.) <u>11.2</u>	2-in. Casing=0.16 gals/ft.
Water volume in well (gals) _____	4-in. Casing=0.65 gals/ft
Pump inlet depth (ft) _____	6-in Casing=1.47 gals/ft

1952 22 = 5 well  
volumes

Analyses requested: TPH<sub>2</sub>, BTX, nTBB, TPH<sub>d</sub>  
No. & types of sample bottles used: 4 Vials, 1 Amber Method of shipment: cooler

[illegible]

# **APPENDIX B**

# **LABORATORY**

# **CERTIFICATES AND**

# **CHAIN-OF-CUSTODY**

# **FORMS**



Report Date: October 7, 2004

Ben Wells  
Environmental Resource Group  
1038 Old Redwood Hwy., Suite 1  
Mill Valley, CA 94941

## LABORATORY REPORT

Project Name: **5 Ashford**

Lab Project Number: **4092908**

This 12 page report of analytical data has been reviewed and approved for release.

---

Mark A. Valentini, Ph.D.  
Laboratory Director



### TPH Gasoline & BTEX in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25256	MW-1R	TPH/Gasoline	110 (1)	50
		Benzene	1.1	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 09/24/04  
Date Received: 09/28/04

Date Analyzed: 10/01/04  
Method: EPA 5030/8015M/8020

QC Batch #: 4905

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25257	MW-3R	TPH/Gasoline	65 (1)	50
		Benzene	ND	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 09/24/04  
Date Received: 09/28/04

Date Analyzed: 10/01/04  
Method: EPA 5030/8015M/8020

QC Batch #: 4905

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25258	MW-5	TPH/Gasoline	80 (1)	50
		Benzene	ND	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 09/24/04  
Date Received: 09/28/04

Date Analyzed: 10/01/04  
Method: EPA 5030/8015M/8020

QC Batch #: 4905

(1) The TPH gasoline result is primarily composed of MTBE.



Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25259	MW-6	TPH/Gasoline	ND	50
		Benzene	ND	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 09/24/04	Date Analyzed: 10/01/04	QC Batch #: 4905
Date Received: 09/28/04	Method: EPA 5030/8015M/8020	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25260	MW-7	TPH/Gasoline	ND	50
		Benzene	ND	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 09/24/04	Date Analyzed: 10/01/04	QC Batch #: 4905
Date Received: 09/28/04	Method: EPA 5030/8015M/8020	

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25261	MW-8	TPH/Gasoline	ND	50
		Benzene	ND	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 09/24/04	Date Analyzed: 10/01/04	QC Batch #: 4905
Date Received: 09/28/04	Method: EPA 5030/8015M/8020	



Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25262	MW-9	TPH/Gasoline	ND	50
		Benzene	ND	0.5
		Toluene	ND	0.5
		Ethyl Benzene	ND	0.5
		Xylenes	ND	1.5

Date Sampled: 09/24/04  
Date Received: 09/28/04

Date Analyzed: 10/01/04  
Method: EPA 5030/8015M/8020

QC Batch #: 4905



### TPH Diesel in Water

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25256	MW-1R	TPH/Diesel	ND	50

Date Sampled: 09/24/04	Date Extracted: 09/29/04	QC Batch #: 4892
Date Received: 09/28/04	Date Analyzed: 09/30/04	Method: EPA 3510/8015M

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25257	MW-3R	TPH/Diesel	ND	50

Date Sampled: 09/24/04	Date Extracted: 09/29/04	QC Batch #: 4892
Date Received: 09/28/04	Date Analyzed: 09/30/04	Method: EPA 3510/8015M

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25258	MW-5	TPH/Diesel	ND	50

Date Sampled: 09/24/04	Date Extracted: 09/29/04	QC Batch #: 4892
Date Received: 09/28/04	Date Analyzed: 09/30/04	Method: EPA 3510/8015M

Lab #	Sample ID	Analysis	Result (ug/L)	RDL (ug/L)
25259	MW-6	TPH/Diesel	ND	50

Date Sampled: 09/24/04	Date Extracted: 09/29/04	QC Batch #: 4892
Date Received: 09/28/04	Date Analyzed: 09/30/04	Method: EPA 3510/8015M



<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (ug/L)</u>	<u>RDL (ug/L)</u>
25260	MW-7	TPH/Diesel	ND	50

Date Sampled: 09/24/04	Date Extracted: 09/29/04	QC Batch #: 4892
Date Received: 09/28/04	Date Analyzed: 09/30/04	Method: EPA 3510/8015M

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<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (ug/L)</u>	<u>RDL (ug/L)</u>
25261	MW-8	TPH/Diesel	ND	50

Date Sampled: 09/24/04	Date Extracted: 09/29/04	QC Batch #: 4892
Date Received: 09/28/04	Date Analyzed: 09/30/04	Method: EPA 3510/8015M

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<u>Lab #</u>	<u>Sample ID</u>	<u>Analysis</u>	<u>Result (ug/L)</u>	<u>RDL (ug/L)</u>
25262	MW-9	TPH/Diesel	ND	50

Date Sampled: 09/24/04	Date Extracted: 09/29/04	QC Batch #: 4892
Date Received: 09/28/04	Date Analyzed: 09/30/04	Method: EPA 3510/8015M

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### MTBE by GC/MS in Water

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
25256	MW-1R	methyl tert-butyl ether (MTBE)	110	5.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.1	95.5	70 – 130

Date Sampled: 09/24/04	Date Analyzed: 09/30/04	QC Batch #: 4898
Date Received: 09/28/04	Method: EPA 8260B	

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
25257	MW-3R	methyl tert-butyl ether (MTBE)	65	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	18.8	94.0	70 – 130

Date Sampled: 09/24/04	Date Analyzed: 09/29/04	QC Batch #: 4898
Date Received: 09/28/04	Method: EPA 8260B	

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
25258	MW-5	methyl tert-butyl ether (MTBE)	80	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	18.1	90.5	70 – 130

Date Sampled: 09/24/04	Date Analyzed: 09/29/04	QC Batch #: 4898
Date Received: 09/28/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
25259	MW-6	methyl tert-butyl ether (MTBE)	5.4	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.3	102	70 – 130

Date Sampled: 09/24/04	Date Analyzed: 09/29/04	QC Batch #: 4898
Date Received: 09/28/04	Method: EPA 8260B	

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
25260	MW-7	methyl tert-butyl ether (MTBE)	15	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.1	95.5	70 – 130

Date Sampled: 09/24/04	Date Analyzed: 09/29/04	QC Batch #: 4898
Date Received: 09/28/04	Method: EPA 8260B	

Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
25261	MW-8	methyl tert-butyl ether (MTBE)	ND	1.0

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	19.0	95.0	70 – 130

Date Sampled: 09/24/04	Date Analyzed: 09/30/04	QC Batch #: 4898
Date Received: 09/28/04	Method: EPA 8260B	



Lab #	Sample ID	Compound Name	Result (ug/L)	RDL (ug/L)
25262	MW-9	methyl tert-butyl ether (MTBE)	ND	1.0
Surrogates		Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)		18.4	92.0	70 – 130

Date Sampled: 09/24/04  
Date Received: 09/28/04

Date Analyzed: 09/30/04  
Method: EPA 8260B

QC Batch #: 4898



## LABORATORY QUALITY ASSURANCE REPORT

QC Batch #: 4906

Lab Project #: 4092908

Sample ID	Compound	Result (ug/L)
MB	TPH/Gas	ND
MB	MTBE	ND
MB	Benzene	ND
MB	Toluene	ND
MB	Ethyl Benzene	ND
MB	Xylenes	ND

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
25276	CMS	TPH/Gas		NS	
	CMS	Benzene	9.57	10.0	95.7
	CMS	Toluene	9.90	10.0	99.0
	CMS	Ethyl Benzene	9.04	10.0	90.4
	CMS	Xylenes	26.2	30.0	87.3

Sample #	Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
25276	CMSD	TPH/Gas		NS		
	CMSD	Benzene	9.33	10.0	93.3	2.5
	CMSD	Toluene	9.66	10.0	96.6	2.5
	CMSD	Ethyl Benzene	9.83	10.0	98.3	8.4
	CMSD	Xylenes	28.0	30.0	93.5	6.8

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



QC Batch #: 4892

Lab Project #: 4092908

Sample ID	Compound	Result (ug/L)
MB	TPH/Diesel	ND

Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.
LCS	TPH/Diesel	2,380	2,730	87.2

Sample ID	Compound	Result (ug/L)	Spike Level	% Recv.	RPD
LCSD	TPH/Diesel	2,420	2,730	88.6	1.7

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery

QC Batch #: 4898

Lab Project #: 4092908

Sample ID	Compound Name	Result (ug/L)
MB	1,1-dichloroethene	ND
MB	benzene	ND
MB	trichloroethene	ND
MB	toluene	ND
MB	chlorobenzene	ND

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	20.5	103	70 – 130
toluene-d <sub>8</sub> (20)	20.3	102	70 – 130
4-bromofluorobenzene (20)	20.2	101	70 – 130



Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.
25259	CMS	1,1-dichloroethene	23.3	25.0	93.2
	CMS	benzene	25.6	25.0	102
	CMS	trichloroethene	21.6	25.0	86.4
	CMS	toluene	24.6	25.0	98.4
	CMS	chlorobenzene	25.5	25.0	102

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	18.3	91.5	70 – 130
toluene-d <sub>8</sub> (20)	20.4	102	70 – 130
4-bromofluorobenzene (20)	20.9	105	70 – 130

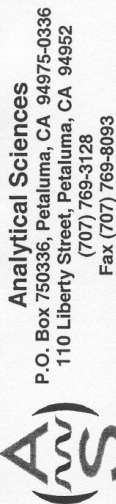
Sample #	Sample ID	Compound Name	Result (ug/L)	Spike Level	% Recv.	RPD
25259	CMSD	1,1-dichloroethene	22.4	25.0	89.6	3.9
	CMSD	benzene	25.8	25.0	103	0.78
	CMSD	trichloroethene	21.9	25.0	87.6	1.4
	CMSD	toluene	24.5	25.0	98.0	0.39
	CMSD	chlorobenzene	25.4	25.0	101	0.39

Surrogates	Result (ug/L)	% Recovery	Acceptance Range (%)
dibromofluoromethane (20)	18.1	90.5	70 – 130
toluene-d <sub>8</sub> (20)	19.9	99.5	70 – 130
4-bromofluorobenzene (20)	20.7	104	70 – 130

MB = Method Blank; LCS = Laboratory Control Sample; CMS = Client Matrix Spike; CMSD = Client Matrix Spike Duplicate  
NS = Not Spiked; OR = Over Calibration Range; NR = No Recovery



# CHAIN OF CUSTODY



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## CLIENT INFORMATION

COMPANY NAME: ENVIRONMENTAL RESOURCE GROUP  
ADDRESS: 1038 REDWOOD HIGHWAY, SUITE 1  
MILL VALLEY, CA 94941  
CONTACT: BEN WELLS  
PHONE#: (415) 381-6574  
FAX #: (415) 381-6320

LAB PROJECT NUMBER: 409298  
CLIENT'S PROJECT NAME: 5A44ford  
CLIENT'S PROJECT NUMBER:

TURNAROUND TIME (check one)  
MOBILE LAB  
SAME DAY  
48 HOURS  
5 DAYS

24 HOURS  
72 HOURS  
NORMAL

COC  
PAGE 1 OF 1

COOLER TEMPERATURE  
12°C

ITEM	CLIENT SAMPLE I.D.	DATE SAMPLED	TIME	MATRIX	# CONT.	PRESV. YES/NO	TPH/GAS/TEX & MTBE EPA 8015M/8020	TPH DIESEL EPA 8015M	OXYGENATED FUEL-ADDITIVES EPA 8260M	VOLATILE HYDROCARBONS EPA 8260	CHLORINATED SOLVENTS EPA 8010	TRPH SM 5520F	SEMI-VOLATILE HYDROCARBONS EPA 8270	TOTAL LEAD	5 LUFT METALS	CAM 17 METALS	COMMENTS	LAB SAMPLE #
1	MW-1R	9/29/04	1300	HL0	5	Y/N	X	X	X									25256
2	MW-3R		1200															25257
3	MW-5		1215															25258
4	MW-6		1130															25259
5	MW-7		1045															25260
6	MW-8		1000															25261
7	MW-9		0915															25262
8																		
9																		
10																		
11																		
12																		

## SIGNATURES

RELINQUISHED BY:

SIGNATURE

9/28/04

DATE

1040

TIME

RECEIVED BY LABORATORY:

SIGNATURE

9/28/04

DATE

10:00

TIME